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| 09/842,862 | 04/27/2001 | Atsushi Inoue | 206611US2RD | 7505 |

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EXAMINER

NGUYEN, TRONG NHAN P

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| ART UNIT | PAPER NUMBER |
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2152

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/842,862

Applicant(s)

INOUE ET AL.

Examiner

Jack P. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>11-23-04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is in response to applicant's amendment filed on 12/15/04. Claim 4 is canceled. Claims 1-3 and 5-20 are being examined.

Response to Arguments

Applicant's arguments filed on 12/15/04 have been fully considered but are not persuasive. Applicant asserts on page 18 that Nounin fails to teach or suggest, "... the first and second sub-networks connected to the backbone network and the packet relay device including the second sub-network." Nounin explicitly discloses the first sub-network (5, fig. 3) being a uni-directional channel that allows data to be transmitted uni-directionally between the radio terminal (105, fig. 3) and the base station (103, fig. 3); the second sub-network (4, fig. 3) being a bi-directional downlink channel between the base station and the radio terminal (first and second sub-networks are referred to for illustration only; i.e., these two networks are distinct from each other); the base stations are connected to each other over the backbone network (1, fig. 3) thereby linking these two networks together (col. 8, lines 42-48; base station {103, fig. 3} functions as packet relay device that communicate and route data between the radio terminal connected over the wireless network with other devices over the wired or LAN network).

In addition, Applicant also asserts on page 18 that Nounin fails to teach or suggest, "...the radio terminal receive a notification message indicating an existence of an address of the packet relay device on the first sub-network through the downlink radio network." Nounin explicitly discloses the base station sends out a notification

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signal to determine if the radio terminal is within its service area. If it is, the radio terminal responds to the notification message by sending an acknowledgement the message to the base station (col. 16, lines 44-52; the notification message contains the address of the base station for the radio terminal to respond to). Nounin further discloses the base station sends out the notification message via its downlink channel to the radio terminal (col. 17, lines 23-25).

Applicant further asserts Nounin fails to teach or suggest, "...the packet relay device carries out the protocol processing on the first sub-network according to the request message on behalf of the radio terminal." Nounin explicitly discloses upon establishing wireless communication between the radio terminal and the base station, the radio terminal sends a request to the base station for processing; after processing the request, the base station sends the response data back to the radio terminal (col. 16, lines 60-65; base station receives and processes requests from radio terminal via a plurality of protocols thus it is performing protocol processing).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-2, 3-7, 15-17, and 19-20 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The claims contain subject matter which was not disclosed in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, as to make and/or use the invention. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The disclosure, in sections referenced by the Applicant, does not teach the limitation, "...the radio terminal is further configured to process the response message received by the first or second communication interface..." as recited in claims 1 and 15. In addition, the limitation, "...wherein the communication interface is also configured to transmit a response message corresponding to the request obtain by the protocol processing in the form such as received by the radio terminal through the second sub-network," as recited in claims 3, 17, and 19 is not disclosed in the disclosure referenced by the sections cited by the Applicant.

Claims 3-7, 17 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claims 3, 17 and 19, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-6, and 8-13 and 15-20 are rejected under 35 U.S.C. 102(b) as anticipated by Nounin et al, 5,802,469 (Nounin hereafter).

As per claims 1 and 15, Nounin teaches a network system, comprising: a radio terminal (105, fig. 3) having a first communication interface usable for reception only (107, fig. 3, col. 8, lines 24-36; *the downlink (high speed) channel is unidirectional for reception only and is connected to first sub-network*) and a second communication interface usable for transmission and reception (106, fig. 3, col. 8, lines 24-36; *the bi-directional (slow speed) channel is connected to second sub-network*); a first sub-network to which the radio terminal is connected through a radio base station (103, fig. 3) of a downlink radio network by using the first communication interface (107, fig. 3); a second sub-network to which the radio terminal is connected through a bidirectional communication network by using the second communication interface (106, fig. 3), the second sub-network being connected with the first sub-network through a backbone network (1, fig. 2; or Internet); and a packet relay device (101, fig. 4) configured to receive a request message requesting a protocol processing with respect to the first sub-network from the radio terminal through the second sub-network, and carry out the

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protocol processing on the first sub-network according to the request message on behalf of the radio terminal, such that a response message corresponding to the request message obtained by the protocol processing is returned from the first sub-network to the radio terminal through the downlink radio network or the bidirectional communication network (col. 8, lines 42-48; col. 8, lines 65 – col. 9, lines 12; base stations {101, 103, fig. 3} function as packet relay devices that communicate and route data between the radio terminal connected over the wireless network with other devices over the wired or LAN network); wherein the radio terminal is configured to receive a notification message indicating an existence or an address of the packet relay device on the first sub-network through the downlink radio network by using the first communication interface when the radio terminal enters a radio area of the radio base station and is configured to transmit the request message after receiving the notification message at the first communication interface (col. 16, lines 44-52, 60-65; col. 17, lines 23-25; when the radio terminal enters an area serviced by the base station, the base station sends out a notification message via the downlink channel requesting a response from the radio terminal; using the address of the base station embedded in the notification message, the radio terminal sends a response message to the base station requesting connection to the network so the radio terminal can communicate with the base station and the network); the radio terminal is further configured to process the response message received by the first or second communication interlace (col. 16, lines 60-65; upon receiving a response message from the base station to establish connection with the base station, the radio terminal can send additional

requests to the network via base station for servicing (e.g., accessing and retrieving content data from the network)).

As per claims 3, 17 and 19, Nounin teaches a packet relay device (101, fig. 3) for use in a network system containing a radio terminal (105, fig. 3) having a first communication interface usable for reception only (107, fig. 3; see claim 1 for more details) and a second communication interface usable for transmission and reception (106, fig. 3; see claim 1 for more details), a first sub-network to which the radio terminal is connected through a radio base station (103, fig. 3) of a downlink radio network by using the first communication interface, and a second sub-network to which the radio terminal is connected through a bidirectional communication network by using the second communication interface, the second sub-network being connected with the first sub-network through a backbone network (1, fig. 3), the packet relay device comprising: a communication interface configured to receive an encapsulated IP packet containing a request message requesting a protocol processing with respect to the first sub-network, which is transferred from the radio terminal located in a radio area of the radio base station through the second sub-network; a processing unit configured to decapsulate the encapsulated IP packet received by the communication interface so as to take out the request message, and carry out the protocol processing on the first sub-network according to the request message on behalf of the radio terminal (col. 8, lines 65 – col. 9, lines 12; *upon receiving the request (via an encapsulated IP packet) from the mobile terminal, the first base station 'FBS' (101, fig. 2) processes the request by decapsulating the request data packet before sending it on to the second base station 'SBS' (103, fig.*

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2) *for additional processing*); wherein the communication interface is also configured to transmit a response message corresponding to the request message obtained by the protocol processing in a form such as received by the radio terminal through the second sub-network (col. 16, lines 60-65; after processing the request from the mobile terminal, the base station returns the response data to the mobile terminal).

As per claims 8, 18 and 20, Nounin teaches a radio terminal (105, fig. 3) for use in a network system containing a first sub-network to which the radio terminal is connected through a radio base station of a downlink radio network (5, fig. 3; *the downlink channel is unidirectional and is connected to first sub-network*), a second sub-network to which the radio terminal is connected through a bidirectional communication network (4, fig. 3; *the bi-directional channel is connected to second sub-network*), the second sub-network being connected with the first sub-network through a backbone network (1, fig. 3), and a packet relay device (101, fig. 3; *see claim 1 rejection for more details on PRD*) for carrying out a protocol processing on the first sub-network on behalf of the radio terminal, the radio terminal comprising:

a first communication interface usable for reception only (107, fig. 3; *see claim 3 rejection for more details on first and second interfaces and sub-networks*), by which the radio terminal is connected to the first sub-network, which is configured to receive a notification message indicating an existence or an address of the packet relay device on the first sub-network through the downlink radio network when the radio terminal enters a radio area of the radio base station (col. 8, lines 24-41); a second communication interface usable for transmission and reception, by which the radio terminal is

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connected to the second sub-network (106, fig. 3), which is configured to transmit a request message requesting a protocol processing with respect to the first sub-network after receiving the notification message at the first communication interface, by encapsulating the request message into an IP (Internet Protocol) packet destined to the address of the packet relay device obtained according to the notification message and transmitting the IP packet through the second sub-network (*it's inherent from the teaching of Nounin that the radio terminal encapsulates the request message into an IP packet before sending it to the base station*); and a processing unit configured to process a response message corresponding to the request message obtained by the protocol processing, the response message being returned from the second sub-network through the bi-directional communication network (col. 8, lines 54 – col. 9, lines 12; col. 17, lines 42-50; the radio terminal is configured to receive the response data via its bi-directional (or slow speed) or downlink (high speed) channels as appropriate).

As per claim 2, it is a network system that performs the steps of claim 3 that do not teach or further define over the limitations of claim 3 above. Therefore, it is rejected for the same reasons as set forth in claim 3.

As per claim 5, Nounin teaches the communication interface is configured to transmit the response message by rewriting a destination address of the response message into an IP (Internet Protocol) address acquired by the radio terminal at a second sub-network side (col. 8, lines 50-57).

As per claim 6, Nounin teaches the communication interface is configured to transmit the response message by encapsulating the response message into an IP

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(Internet Protocol) packet destined to an IP address acquired by the radio terminal at a second sub-network side (col. 8, lines 54-57; *it's inherent within the teaching of Nounin that the base station encapsulates the response message into an IP packet before transmitting the packet to the radio terminal*).

As per claim 9, Nounin teaches the second communication interface is also configured to receive the response message transmitted from the packet relay device through the second sub-network (col. 8, lines 54-57).

As per claim 10, Nounin teaches the response message is an encapsulated IP packet, the second communication interface decapsulates the encapsulated IP packet so as to take out the response message and gives the response message taken out from the encapsulated IP packet to the processing unit (col. 8, lines 58-64; *it's inherent within the teaching of Nounin that the radio terminal decapsulates the encapsulated IP packet in order to interpret the data contained within the packet*).

As per claim 11, Nounin teaches the notification message is provided in a form of a specific message to be regularly transmitted by the radio base station or a specific node provided in the first sub-network, and the first communication interface is configured to acquire information indicating the existence or the address of the packet relay device by receiving the specific message regularly transmitted by the radio base station or the specific node (col. 36, lines 55-61; *radio base station sends out regular broadcast messages to the radio terminal to ascertain whether the terminal is within its cell area or not*).

As per claim 12, Nounin teaches the second communication interface transmits

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the request message in a form of a broadcast packet with respect to the first sub-network or a multicast packet with respect to a prescribed group of nodes on the first sub-network (col. 36, lines 63 – col. 37, lines 6; col. 35, lines 62-65; *radio terminal receives the broadcast message via the first sub-network and sends the request to the base station using the second sub-network*).

As per claim 13, Nounin teaches the second communication interface that transmits the ARP (Address Resolution Protocol) request message with respect to the first sub-network (col. 6, lines 62-66; using the bi-directional interface, the mobile device sends an ARP request to the base station for processing).

As per claim 16, it is a packet processing method that performs the steps of claims 3 and 8 above that do not teach or further define over the limitations of claims 3 and 8 above. Therefore, it is rejected for the same reasons as set forth in claims 3 and 8 above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nounin in view of Ohno et al, 6,219,715 (Ohno hereafter).

As per claim 7, Nounin teaches a system upon receiving a connection request (e.g., DHCP) from the second interface of the mobile device, the system then decapsulates and processes the request, and sends the response to the mobile device through the second sub-network (col. 16, lines 53-59; when the mobile terminal enters an area serviced by a particular base station, the mobile terminal sends a request to establish connection with the base station; the connection response includes the server assigning an address to the mobile terminal to enable the mobile terminate to send/receive messages from the network). Nounin does not explicitly disclose that the system sends the request to the DHCP server for processing. It is well known in the art to use a DHCP server for initializing and assigning IP address to devices. Hence, it would have been obvious to one of ordinary skill in the art to relay the request to a DHCP server in order to provide address assignment for the mobile device to enable the mobile device to communicate with other devices on the network (see also Ohno disclosure in col. 4, lines 19-28).

As per claim 14, Nounin teaches upon receiving a response message corresponding to the request message, the processing unit sets the second communication interface as a transmission interface and the first communication interface as a reception interface with respect to an IP (Internet Protocol) address allocated to the radio terminal on the first sub-network that is contained in the response message (col. 8, lines 58 – col. 9, lines 12; col. 16, lines 53-59). Nounin does not explicitly disclose the request being a DHCP request. However, as noted in claim 7 above, upon entering an area serviced by a particular base station, the mobile terminal

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sends a DHCP request to the DHCP server via the base station for address assignment so the mobile terminal can establish communications with the network.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack P. Nguyen whose telephone number is (571) 272-3945. The examiner can normally be reached on M-F 8:30-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached on (571) 272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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